I and I is II: New Ways to Mentor and Reorganize an Inpatient Neurosurgery Service

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Abstract

Contemporary departments in academic medical centers face challenging obstructions to the sometimes conflicted missions of education, research, and patient care. While the ward demands of patients and families have remained stable or increased, the availability of both attending faculty and residents has often decreased due to the requirements of relative value unit production and trainee duty hour limitations. The Department of Neurological Surgery at the University of Washington has evolved a novel solution to provide senior level attending coverage and bedside mentoring to help fill these gaps.

Keywords

education, techniques, neurosurgery, clinical specialty, neurohospitalist, clinical specialty

Thirty years ago, when Paul Starr published his influential work "The Social Transformation of American Medicine," his predictions that the health care professions were being co-opted both by capitalism and by government seemed overstated.¹ Today, they seem perhaps over hopeful. Others have written that the causes for some disintegration in the modern healing professions and the loss of integrity are at least in part a consequence of an abandonment of those historical hermeneutics that have helped to form the canon of the modern medical profession.² Indeed, recalling an idealized Oslerian humanism, Hafferty and Castellani have referred to fostering a sense of belonging and solidarity among medical students a "nostalgic professionalism." Some have proposed expanding, or simply preserving, the teaching of medical history as part of a core curriculum in schools of medicine to internalize this sense.³ Many have lamented the loss of personal mentoring for trainees so idealized by Osler.^{4,5}

Here we argue that another, perhaps complementary approach to inculcating the bedside teaching values identified with William Osler,⁶ Paul Beeson,⁷ and other heros of traditional academics, is to employ older physicians from the community in the role of both hospitalists and mentors on the wards and in the clinics of major teaching centers. This model has been established with some success in the Department of Neurological Surgery at the University of Washington School of Medicine.

The combination of rapidly expanding technologies, changing consumer expectation, demands of government

oversight, and workweek limitations placed on residents, and necessarily more collaborative paradigm of care, all confounded by a certain weakening of the traditional role of medical school faculties in establishing community standards, have strained capacity in teaching hospitals. Faculty members must often now fund some or all of their salaries out of revenues generated or grants obtained, and more clinical relative value units (RVUs) are required to support the enterprise of the medical centers. Quite naturally, the convergence of these events has resulted in specialists with the greatest ability to bill spending more time in operating rooms, angio, and procedure laboratories than in their traditional roles as bedside teachers.⁸ Our neurological surgery department found it especially difficult to meet consistently the American College of Graduate Medical Education (ACGME) pedagogic requirements for residents, limit the number of hours they worked, and still meet the

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needs and expectations of extraordinarily ill patients. The greatest difficulty found its expression at the county-owned, university-staffed Harborview Medical Center, the only Level One trauma center in 5 Northwest states, an expanse that geographically comprises 27% of the country. At this institution, the neurosurgery service usually cares for 50 to 60 inpatients, and sometimes as many as 80 to 90. The high acuity of care required by most of these patients necessitates collaboration between services, and the hospital requires a labor-intensive policy of patient- and family-centered care.

In 2003, when the work-hour limitations were imposed,⁹ the traditional roles of neurosurgical residents and faculty members were altered in ways not then completely foreseen. The residents, before then expected to stay in the hospital until the work was done, became less sleep deprived, perhaps more accurate, and had more time for both a personal life and private study.¹⁰ They also acquired less experience, and the question of whether or not patient care actually improved after these limitations were introduced is far from clear.^{10,11} The faculty members, who had divided the time between the ORs, clinics, laboratories, wards, and classrooms, now found themselves with different personal obligations and with greater direct clinical responsibility.¹² Several potential resolutions emerged to help our service address the inequities created, shortcomings that often were experienced most among the patients in the ordinary wards and in the intensive care unit (ICU), at Harborview.

Often unable to escape the RVU-producing tasks, surgeons of record had come to rely on the residents and nursing staff to absorb many of their more routine responsibilities: twice-daily rounds, pre- and postop visits, keeping up with rapidly changing orders, informal consultations with other attendings, and family conferences. These nontechnical tasks, often perceived by residents as onerous, in fact often require experience, delicacy, and time. As the duty hour restrictions progressively limited the residents' ostensible ability to help do this work, nurses often became frustrated by their inability to serve as a satisfactory surrogate for the operating surgeons in the minds of patients and families. Thus, better solutions had to be sought.

The initial attempt to provide improved coverage for routine care and ward emergencies, or perceived emergencies, included the hiring of ward-based midlevel neurosurgical specialists. This measure provided some relief but did not solve many of the problems. Although the advanced registered nurse practitioners (ARNPs) and physician's assistants (PAs) who were trained to do this work learned to function semi-independently, they were limited by knowledge, experience, and stature. The daily management of the routine medical and neurosurgical matters came easily enough, but still patients and their families naturally wanted to talk to a neurosurgeon, especially if problems occurred. In addition, some of the complex management issues were beyond the scope of midlevel practice. Finally, the same faculty members did not supervise

them on a daily basis for the same reasons that they could not do the work themselves in the first place. While there was nominal supervision, it was not nearly present enough on-site, and this led to misunderstanding, poor communication, and occasional interpersonal conflict. A better solution required more immediate, more experienced presence.

Where could this be found? Seattle, like the most major American cities, has a variety of medical centers and health care delivery systems. All of them employ or in some way contract with individual neurosurgeons or neurosurgical groups. Since the OR life of doctors in this specialty is necessarily limited, there does exist a supply of experienced people potentially available. While there has always been relatively effortless transition from university to practice, traditionally there have been barriers to movement from the community into academics.

It happened that, just as this problem bloomed into its most dramatic conundrum, 2 senior neurosurgeons at Group Health Cooperative in Seattle were about to retire from the OR. Both had maintained slight connection to the University of Washington Department of Neurological Surgery where they had trained. This included supervising in the neurosurgery resident's clinic held 1 day a week, attending conferences, and occasionally contributing to the literature. Here were experienced doctors from the community, both about 65 years old, no longer anxious to operate, and certainly not career building, who could potentially attend on the wards, ICUs, and in the clinics. But they also required temperaments enabling them to serve as mentors and role models in order to build a workable structure for the midlevel practitioners already in place—but wandering. Such a temperament requires equanimity, experience, enough time, and a certain commitment to the humanities that, in the current instance, was learned by both of the hospitalists at the same liberal arts college. Thus began the neurosurgical hospitalists' service at Harborview Medical Center in 2008.

It was not immediately a total success. There were several reasons for a slow beginning, but one of them was not antipathy on the part of the residents, staff, and faculty. The small improvements that did occur rapidly, mainly better communication and senior faculty availability, soon found favor and appreciation by nearly all of these others. The residents in particular were grateful for advice, occasional help with technical problems and, more than anything, a mature ability on the part of the hospitalists to manage the complexities of explaining matters to patients and families. It was important for them to have nonthreatening, collegial senior surgeons available for occasional guidance. Indeed, the 2 new clinical professors seemed immediately appreciated.¹³

What did not work right away was the structure. The Chair and hospital administration modified the supervisory structure of the midlevel practitioners, first by trying to create a separate hospitalist step-down service (which itself failed because of inherent confusions over responsibility) and ultimately by altering both the supervision and the reporting structure.

In its current form, the midlevel practitioners are administratively directed by the same nurse manager responsible for the major neurosurgery ward, and clinically supervised by the 2 neurosurgical hospitalists. This has become a very successful partnership. It should be inserted here that the same manager and hospitalists have themselves supervised the interview and hiring process for the 11 midlevel ARNPs and PAs who currently are employed in the outpatient clinic and on the wards. While applicant experience was valued in the selection process, the most fundamental requirement demanded for employment was a commitment to collegiality. This characteristic is impossible to demand and difficult to teach. So, we hired people who seemed to be collegial; it turns out that they are.

The administration has developed a program for introducing all new employees to our hospital systems. In addition, the hospitalists developed an informal didactic training plan for each newly hired midlevel practitioner tailored to their specific needs. Those with more neurosurgical experience required less of this mentoring, but most of them needed to learn comprehensive neurological examination, interpretation of imaging, drugs to use and avoid, interpretation of laboratory values, some procedures, and most importantly, signs and symptoms of trouble. Throughout this early education, we continued to reinforce our commitment to partnership, and our promise that no one would fail. None of them have.

The 3 physician's assistants who help manage the attending outpatient clinics are largely autonomous on the days that those faculty members are operating. They do have access to other attendings and to the neurosurgical hospitalists for advice about problems, including those that require admission or referral to another service. Often inspecting a wound, reprogramming a shunt, or interpreting images can resolve the difficulty. Simply having reliable access to a senior neurosurgeon, however, is reassuring to them. These PAs are not involved with the weekly resident run clinic, which remains supervised by the 2 hospitalists.

The management of the inpatient service is more complex. The RN manager designs the schedules and coordinates the logistics, including vacations, continuing medical education (CME), and hospital licensure requirements for the midlevels. The 2 senior neurosurgeon hospitalists provide clinical oversight. In practical terms, the day begins with radiology and work rounds at 6:00 AM. At 7:15 AM, the entire team meets for breakfast. This includes 1 of the 2 neurosurgical hospitalists, the 3 or sometimes 4 midlevel practitioners working that day, the 3 chief residents (each responsible for a different subspecialty part of the service), 3 or sometimes 4 junior residents, an intern and often several visiting subinterns, the neurocritical care (NCCU) fellow, and a clinical pharmacist. The post-call residents describe a plan of the day for every patient on the service, including the consults, finish the left over work, and go home. The remaining residents go to the OR, except for 1 on floor duty who manages procedures and calls from the emergency department. The midlevel practitioners divide the

ward work, capped at taking responsibility for no more than 10 to 12 patients each. The NCCU residents and fellows are responsible for the 25 to 35 neurosurgical patients in that unit. In addition, there are often as many as a dozen neurosurgery patients in 1 of the 4 other ICUs: trauma, burn, pediatrics, or medicine. The appropriate ICU team cares for these latter patients until transfer to the ward.

About 8:00 AM, the midlevels begin their work, and the neurosurgical hospitalists make rounds of the ward patients, then round with the NCCU team. Throughout the day and until 7:00 PM when the midlevels sign out to the residents, the neurosurgical hospitalists are available to consult, answer questions, meet with patients and families, do minor procedures in the wards or in the clinics, coordinate care with referring hospitals, or intervene in any other way that residents, midlevels, bedside nurses, or other faculty find helpful. The neurosurgical hospitalists are on-site between 6:00 AM and 6:30 AM and about 4:00 PM; after that, they are available by page until evening sign out.

This structure ensures oversight, provides stability, and guarantees that a senior faculty level neurosurgeon is available to patients, families, and staff for 12 hours a day from Monday through Friday. On weekends, the chief residents and faculty member on call supervise the midlevel practitioners, usually only 2 or 3 of them on Saturday and Sunday.

Some difficulties remain. The sign out functions are cumbersome and occasionally communications are unclear, when the residents are in the OR until late in the afternoon. The morning discharges are sometimes delayed for a variety of reasons: the attending of record has not yet finalized the plan; there is a plan, but it has not made its way to the appropriate resident by sign out at breakfast; all of the appropriate therapies have not signed off on safe discharge criteria. These challenges are being addressed by technological means: an electronic white board at each nursing station that indicates what discharge goals have been achieved. Each function that has to be concluded prior to discharge, for example physical therapy, occupational therapy, speech, and so on, is indicated by a red symbol while still unfulfilled. As soon as a function is satisfied, that symbol turns green. When all the symbols are green, the unit discharge facilitator in charge of managing discharge or transfer begins the process and informs the attending that there are no notes in the chart that justify further acute care in patient hospitalization. The attending then either agrees to discharge the next day or not. If they do not agree, of course, it is then their responsibility to establish in the record the reasons that continued hospitalization is necessary.

Since the implementation of these new systems, our residency program is in compliance with ACGME requirements. The daily operation of the wards and ICU are steadily improving, there is less disagreement between the NCCU staff and the neurosurgery service over the details of management, patients and their families are seen promptly by midlevel practitioners and senior neurosurgeons throughout the day,

communication is better, and everyone is happy in their work. The metrics for measuring patient satisfaction have dramatically improved because a senior neurosurgeon is available to reliably provide sophisticated information delivered unhurriedly. Last, and perhaps most significantly, the junior residents now have in place senior faculty members who are on the wards and in the ICUs with them to serve as mentors, help them with procedures, intervene with difficult patients and families, or sort through diagnostic and management problems.

Future research might include prospective measurements of patient, family, and staff satisfaction; changes in rates of complication or return to ICU; infection rates; and analysis of resident workweek violations.

We feel that this model has served our patients, residents, and the institution very well. It has also been enormously rewarding to the authors.

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